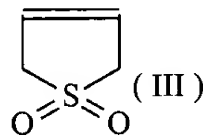
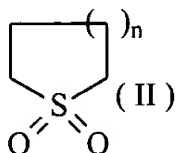
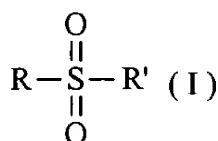



1. (Amended) An electrolyte for a lithium secondary battery comprising:
a non-aqueous organic solvent; and
a sulfone based organic compound selected from the group consisting of compounds represented by the following Formulae (I), (II), and (III), and mixtures thereof:



where R and R' are independently selected from the group consisting of primary alkyl groups, secondary alkyl groups, tertiary alkyl groups, alkenyl groups, aryl groups, halogen substituted primary alkyl groups, halogen substituted secondary alkyl groups, halogen substituted tertiary alkyl groups, halogen substituted alkenyl groups, and halogen substituted aryl groups, and n is from 0 to 3, wherein the amount of the sulfone based organic compound is from 1 to 5 weight% based on the total amount of the electrolyte.

2. (Amended) The electrolyte for a lithium secondary battery according to claim 1, wherein the halogen is selected from the group consisting of fluoro, chloro, bromo, and iodo.

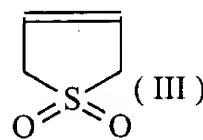
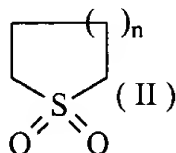
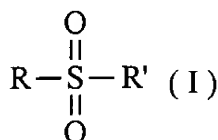
3. The electrolyte for a lithium secondary battery according to claim 1, wherein the sulfone based organic compound is selected from the group consisting of methyl sulfone, vinyl sulfone, phenyl sulfone, 4-fluorophenyl sulfone, benzyl sulfone, tetramethylene sulfone, and butadiene sulfone.



4. (Amended) The electrolyte for a lithium secondary battery according to claim 6, wherein the amount of the sulfone based organic compound is 0.1 to 10 weight% based on the total amount of the electrolyte.

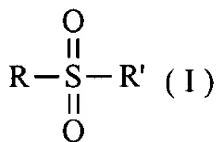
5. (Amended) A lithium secondary battery comprising:
an electrolyte comprising a non-aqueous organic solvent and a sulfone based organic compound selected from the group consisting of compounds represented by the following Formulae (I), (II), and (III), and mixtures thereof;

a positive electrode including lithium-transition metal oxides as a positive active material; and
a negative electrode including carbon, carbon composite, lithium metal, or lithium alloy as a
negative active material:



where R and R' are independently selected from the group consisting of primary alkyl groups, secondary alkyl groups, tertiary alkyl groups, alkenyl groups, aryl groups, halogen substituted primary alkyl groups, halogen substituted secondary alkyl groups, halogen substituted tertiary alkyl groups, halogen substituted alkenyl groups, and halogen substituted aryl groups, and n is from 0 to 3, wherein the amount of the sulfone based organic compound is from 1 to 5 weight% based on the total amount of the electrolyte.

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6. (New) An electrolyte for a lithium secondary battery comprising:
a non-aqueous organic solvent; and
a sulfone based organic compound represented by the following Formula (I):



where R and R' are independently selected from the group consisting of alkenyl groups and halogen substituted alkenyl groups.

7. (New) The electrolyte for a lithium secondary battery according to claim 6, wherein the halogen is selected from the group consisting of fluoro, chloro, bromo, and iodo.